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G-C WINS SUPER MILEAGE CHALLENGE

To the STINGIEST go the SPOILS

Vehicle built by students gets 1,048.79 miles per gallon to win fuel-usage race

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CLERMONT – Tom Branstetter didn't put the petal to the metal Monday, but the Greenfield-Central junior ended up just where he wanted in the Super Mileage Challenge – victory lane.

"It means a lot that we've been able to hold on and go and do a repeat," Tom said this morning. "We're looking for a three-peat next year."

G-C's team won the school's second consecutive championship in the stock class of the Super Mileage Challenge, where high school teams compete in getting the best gas mileage. Their average for three runs was 1,048.79 miles per gallon.

More than 30 high school teams competed in the 14th annual Super Mileage Challenge at O'Reilly Raceway Park. The event was put on by the Indiana Mathematics, Science and Technology Education Alliance. Founded in 1990, IMSTEA is a non-profit organization that promotes math, science and technology skills. Each Super Mileage team has 25 minutes to complete a run of 10 laps – a distance of 6.25 miles. Vehicles must maintain an average speed of 15 mph. If a team misses the speed or time requirement, the run doesn't count.

Small transponder devices allow event officials to electronically track the speed and laps of each car to ensure that all the runs meet the Super Mileage Challenge requirements.

And occasionally, some oldfashioned NASCAR-style racing occurred – even if it was at something under the speed you find in the average school zone. Tom told his team after a run that he was rubbed by a driver from Evansville Mater Dei.

"You're bound to sometimes rub if you're passing close," Tom said this morning.

(And perhaps rivals will be rivals. G-C won the stock class last year, while Mater Dei won the unlimited class. In winning last year's stock class, G-C broke a three-year streak of Mater Dei winning that title.)

Victory comes in the smallest of margins in the Super Mileage Challenge because the fuel is measured in grams. After a run, a team member takes the small fuel tank to a race official to be weighed. Remaining fuel is used to calculate the miles per gallon achieved by the car. A team's three best runs are averaged to compute their score.

Supermileage teams compete in two main classes – stock and unlimited. Stock teams use an unmodified four-stroke cycle Briggs & Stratton engine. Unlimited class teams modify their engines and typically achieve better fuel economy. A handful of other teams race in the experimental class using other sources of power like electric, air, diesel, hydrogen and fuel cell.

G-C performed what the team believes to be an unprecedented feat – swapping out engines between runs to compete in both the stock and unlimited classes with the same car. Other schools compete in both classes using two different cars.

"It's going to feel very special just to know that we can do it," G-C junior Ronnie Jones said during the final run before the engine switch. "It's an innovation and something that we can say we were the first to do."

After three solid runs, G-C faced a dilemma around noon. They were in first place in the stock car class by a considerable margin and they wanted to switch out their engine to compete in the unlimited class. However, they didn't want to risk another stock class team beating their average with better runs in the afternoon.

The team decided on a fourth run in the stock class, but it didn't turn out like they wanted. Their run was disqualified because it went over the 25-minute limit.

Frustrated, the team decided to switch out their engine after the disqualified run. They rushed back to their pit area; if they wanted to make their next run, they had to get the new engine installed and inspected in less than 30 minutes. As soon as they installed the modified engine, they rushed back into line for the next run.

"It's a lot of fun, but at times it can be nerve-wracking and stressful," G-C senior and team co-captain Kevin Harding said.

G-C made two unlimited class runs – one short of what they needed to get an official score in the category. Still, the team got experience working with a modified engine and were able to test some of their racing theories.

While the racing in the Super Mileage Challenge isn't fullthrottle, it requires the same types of strategic decisions made by professional racing teams.

Teams use stop watches to track their times and walkietalkies to communicate during the runs, and the tension builds as the run progresses. If a team runs too fast, it gets bad gas mileage; if it runs too slow, they're disqualified.

Although it looks smooth going out on the track, the car gets jostled around because the driver is riding low without a suspension system, Tom said.

Tom got some driving advice from Josh Sotus, who drove the team's Super Mileage car last year. Josh advised Tom to find the smooth parts of the track, to watch for other cars and to stay close to the cones at the bottom of the track, which minimizes the distance traveled.

One factor Monday was the wind, which was gusting throughout the day.

"The wind is killing us," Josh said as he watched a run. "It's killing everybody."

Tom didn't have much experience driving the Super Mileage car before he got out on the track. He said his first experience in driving the car was last Saturday in the high school parking lot.

In the months leading up to the competition, the G-C team used a device called an inertia dynamometer to evaluate different clutch and fuel combinations without running them on a track, said technical advisor David Land.

"This has been a developmental year," he said. "We instituted a new tool."

Out on the track, Tom fired the engine of the G-C car about once a lap by tugging a pulley. The G-C team's strategy was to fire the engine for just a few seconds and then let the car coast around the track. To conserve fuel, the team took as much of the allotted time as possible – a strategy that backfired on the fourth run.

Team members used encrypted radios to communicate. Their only communication with Tom was to tell him when to fire his engine.

"We had this (radio) set-up last year and it worked out wonderfully," said Ronnie Jones, a junior on the G-C team. "(Other teams) can't hear what we're saying and we can strategize more."

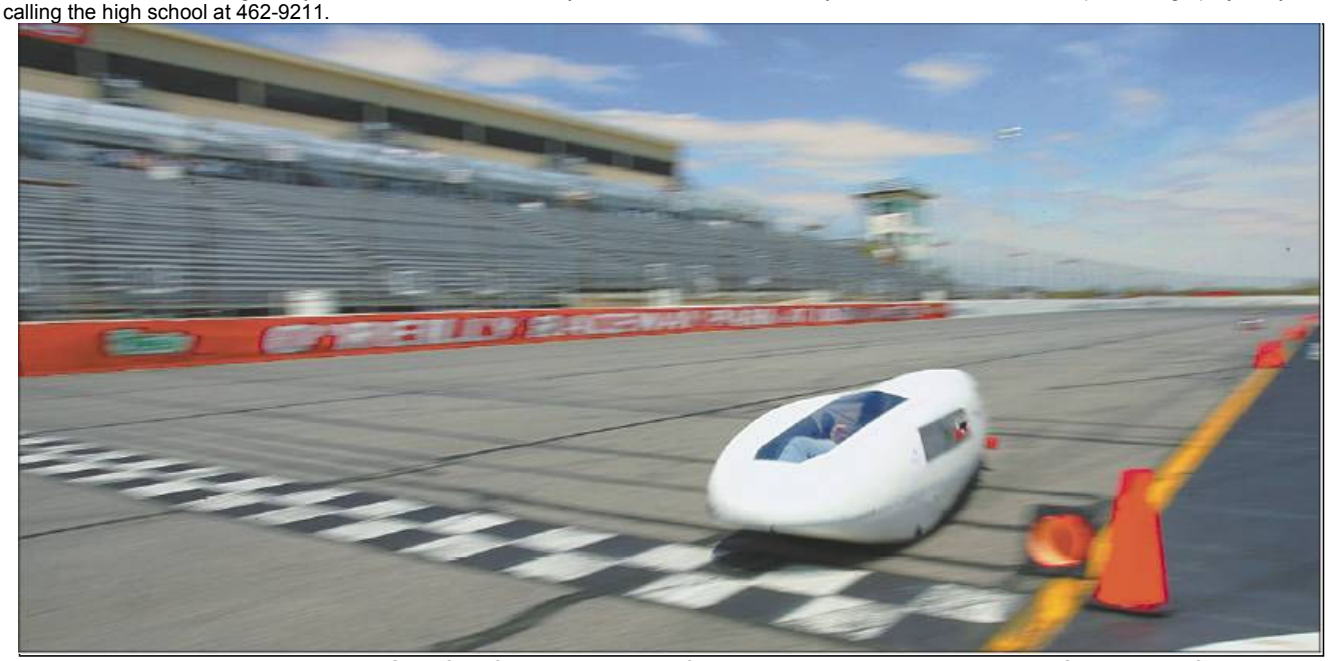
G-CHS teacher Trent Taylor said he's seen the cars become increasingly sophisticated over the years as the interest and number of teams have grown.

"It is extremely competitive," Taylor said. "You're under the gun. It is racing, and there are very few secrets."

As G-C competed Monday, the team was already thinking about the future. They'd started to build an unlimited class engine with a turbocharger and fuel-injection system before the race, but had to scrap it when they ran out of time.

That engine will be their new weapon for next year.

Team advisers have discussed letting the team build a second car so that the team can compete with separate cars in the stock and unlimited divisions. To do that, though, they'd need to raise more money. Find out more about how you can contribute to the Super Mileage project by calling the high school at 462-9211.



Tom Russo / Daily Reporter That's a run: Greenfield-Central's car hits the finish line at something close to 15 mph. Speed is not of the essense in the Super Mileage Challenge. Rather, teams strive for the best fuel mileage possible.

Tom Russo / Daily Reporter Clear view: Greenfield Central High School junior Tom Branstetter checks his mirror in the team's super milage car. The mirror was important: Cars vying for best position on the track at O'Reilly Raceway Park were in danger of colliding.

Tom Russo / Daily Reporter Finishing touches: Greenfield-Central High School student Kyle Kingery (right) helps Matt Allison with the canopy of their Super Mileage car with driver Tom Branstetter ready to go inside Monday at O'Reilly Raceway Park in Clermont.